THE NEED FOR DEVELOPING ECONOMIC ASSESSMENT APPROACHES FOR UNDERVALUED NATURAL RESOURCES: RIVERS AND WETLANDS

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Abstract. Conventional economic assessment techniques have historically undervalued existing natural resources resulting in unwise and deleterious growth management decisions. Degraded water quality, diminution or loss of recreational and commercial fisheries, increased siltation and sediment deposition in rivers and lakes, loss of wildlife habitat, and general aesthetic losses are the consequences of decision making based on incomplete economic analysis. We propose developing additional strategies to appropriately determine economic and societal values inherent in natural river and wetland systems which have historically been over looked. Furthermore, much of the data collection and analysis can be undertaken by citizen organizations dedicated to restoring and protecting the quality of the rivers, wetlands, and other natural resources in their communities.

INTRODUCTION

Rapid growth in Georgia over the past several decades has set the stage for coming to grips with the necessity to develop better understanding of valuing our resources as more demands are placed on them to meet the needs of society. With 70,000 miles of streams and rivers but essentially no natural lakes of direct commercial economic value, Georgia's growth particularly in the northern half of the state has been dependent largely upon artificial and often large impoundments as well as direct water withdrawal from unimpounded streams. South Georgia is essentially dependent on groundwater wells to support its economy. Yet even in the southern half of the state, and particularly in southwest Georgia, groundwater pumping effects streams and rivers by lowering base flows and dewatering wetlands, particularly during summer months when agricultural demands are high.

Traditional economic wisdom would seem to say that past and present uses of these aquatic resources are appropriate to meet the demands of growth. At the same time there is a growing realization that (1) these resources are finite; (2) that competition for them is growing; and (3) traditional economic paradigms are compromising existing natural qualities and values historically taken for granted. It is this third point to which this paper is directed.

As a result of traditional economic thinking natural systems are often economically undervalued. This often leads to unanticipated adverse economic impacts later when decisions to modify the use of the rivers or wetlands fails to consider the economic values of the natural system. The larger question then becomes how to place economic valuations on these uses which have historically just been taken for granted, ignored, or were unknown. These uses are often referred to as non-market goods.

CONCEPTS OF ECONOMIC VALUATION

The knowledge that a resource simply exists has a certain economic value associated with it, even though that resource may never be used. This is referred to as existence value and can be defined as the amount which the existing generation is willing to pay to preserve and protect a natural resource. For example, as a society, people are willing to pay to have rivers, streams, and wetlands protected for future generations to enjoy. This kind of value is substantiated simply by the existence of the growing number of conservation and environmental groups willing to raise and spend money to protect these resources for the future.

Of course the use of a resource produces a whole other set of economic inputs associated with those uses. For example, to produce a recreational activity on a river may involve economic inputs which include transportation costs, food, lodging, equipment rental, film, etc. which are all used because of the recreational opportunity arising from the existence value. But it must be not be construed to mean that the total existence value of a resource is equal to the total dollar value generated from the willingness to pay for the benefits of the recreational experience alone. Other societal economic benefits may also be associated with existence value and need to be determined in order to approximate the true total value of the resource.

The concept of willingness to pay (WTP) is somewhat complex. The cost a person pays to go on a fishing trip, for

example, is not necessarily their willingness to pay. They may actually be willing to pay more for the same benefit (i.e. going fishing). Determination of the economic value of a resource then becomes the difference between WTP and what is actually paid. The total economic value may be further enhanced by the existence value as discussed above. It must be remembered that the existence value is there whether the resource is used or preserved for the future. Subsequently, economics considers existence values to be a non-use value.

There are a number of methods for measuring the WTP for goods (benefits) available from a river or other natural system. Two of these methods, the travel cost method and the hedonic pricing method rely on extrapolating estimates of the WTP from existing market data of known expenditures on related goods. The contingent valuation (CV) method uses direct surveys of actual resource users or potential resource users (i.e. general public) rather than existing market data to estimate non-market goods.

The travel cost method assumes that users of non-market natural resource goods produce a measurable WTP which is indirectly related to the cost of getting there. Because this method relies heavily on known market data inputs, such as rates of visitation, estimates of travel costs, and certain socioeconomic characteristics of the visitors themselves this methodology may be cumbersome and inappropriate for use by a grassroots organization. This method is best adapted for use of site specific resources, such as state parks.

The hedonic pricing method similarly is based upon available known market data to indirectly infer WTP by consumers. The assumption of this method is consumer satisfaction is related to characteristics or attributes of a market commodity and that the WTP is related to the nature of these characteristics and attributes. This approach has been applied most frequently in attempts to value non-market resources associated with property values. For example, lake front or river front properties generally demand higher market prices. The higher cost to live next to a trout stream or a lake front with a view implies a non-market commodity (clean water/viewshed). Therefore a WTP for these non-market commodities (characteristics/attributes) can be derived. The derivations of these values using the hedonic pricing method are cumbersome and not well suited to grassroots application.

Probably the one method that may be most applicable for use by grassroots resource conservation organizations and the only method of the three presented here which can attempt to measure non-use attributes, like existence, is the contingent valuation (CV) method. Unlike hedonic pricing and travel cost methods which rely on existing market data to infer or extrapolate values, CV uses direct surveys of actual or potential (general public) users of the resource to determine their willingness to pay. The basic tool for using the CV method is questionnaires and/or surveys. Given this approach it becomes obvious that survey design becomes extremely important, not only to define the goal of the survey, but also to eliminate or minimize bias in order to accurately identify consumer practices, needs, and wants.

CAVEATS TO ECONOMIC ANALYSIS

To successfully use economic analysis in efforts to save or protect a river, wetland or other natural resource, establishing the credibility of the analysis is essential. Design strengths and biases have to be identified and stated so that those participating in the analysis understand them. Likewise, the goal of the study must be clearly defined. Credibility of the study is of utmost importance.

A grassroots organization wishing to undertake an economic analysis of a local resource must keep the credibility structure in mind. To do this, the design of the project should be undertaken by a neutral research group without apparent conflicts of interest; the design should be inclusive of all beneficial public and private uses, values and functions of the resource; and the final product should be peer reviewed, respond to criticisms, and articulated in a clear and professional manner. Media support and publicity can help define the values of the resource in the broader public arena and help establish an appreciation for the issues surrounding it. But ultimately, the reason for undertaking an economic analysis is to put that information onto the table of policy-makers. Certain local business sectors should be solicited for support as well as local property owners who may have economic interests in riverside properties. Finally, the report must be presented so that it can be fully appreciated for its objectiveness and confidence that it is an important decision making tool.

The development of economic analysis should become a proactive tool to protect and preserve our aquatic resources. Environmental and conservation organizations have historically used public education, media, biological and chemical analysis, and advocacy to protect resources within their communities. With the advent of new economic tools for non-traditional valuations of resources, a broader understanding of the importance of these resources to the community is being brought to bear on the decision making process.

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